The Third Eye

A portapak handbook for teachers

J. B. Moriarty

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J.B. Moriarty

Utilization Project Consultant
The Ontario Educational Communications Authority

Address all enquiries to:

Utilization Section
The Ontario Educational Communications Authority
Canada Square
2180 Yonge Street
Toronto 295, Ontario

Editor: Susan Cravit
Design: Burton Kramer Associates Ltd.
Photos: Ian Samson and James Moriarty

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The Third Eye of Enlightenment

At the top of the skull of certain reptiles there is an organ which contains all the essential features of an eye. In human beings this vestigial third eye, called the pineal gland, has migrated to a position where the spinal cord meets the brain at the level of the true eyes. Only recently have biochemists discovered that one of the endocrines secreted by this gland controls perception and rationality.

Intuitively, the ancient Hindus had recognized that man possessed this special body which they referred to as the third eye of spiritual vision. Later medieval artists depicted it appropriately in the centre of the forehead of their idols.

A new Third Eye of Enlightenment has evolved in the form of the portable camera and videotape recorder. Through technology, we can now attain levels of perception with an unbelievable ease that even those ancients couldn't have foreseen. This booklet is designed as a primer for teachers who will give their students this exciting new tool for discovery.

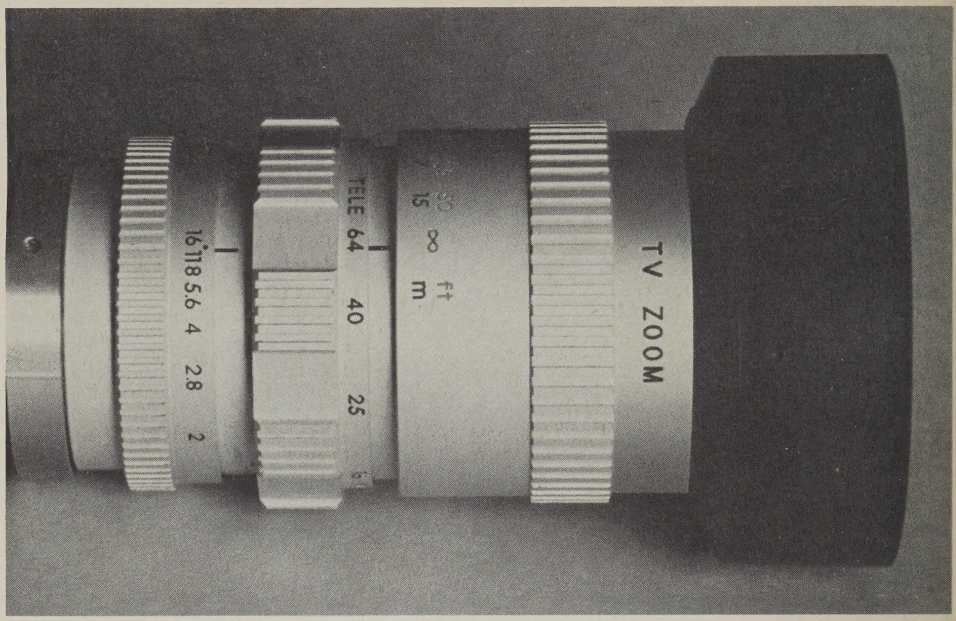
The Tapeworms

These easy riders are demonstrating a healthy disrespect that children have and should be encouraged to have for the portapak. Their disrespect doesn't imply abuse but rather a disregard for the restrained and uninspiring use counselled by those with a tripod mentality. Yes, the equipment has sensitive electronic components, so it isn't indestructible. But because it was designed for portability, it isn't fragile. Just compare the imagined dynamism of the sequence these two are taping with those wearisome tapes of choral groups or sluggish assemblies you've seen.

For purposes of reproduction, the "video shots" were simulated by the conventional means of still photography. However, most of the contracts in this booklet have been carried out by pupils in Grades 4 to 8 and the pictures represent elementary school students' treatment of the topics.

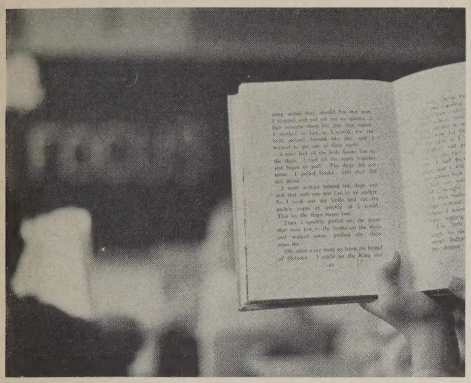
How soon can your sudents use the portapak? They can use it as soon as they are able to steady a camera and you can bend the timetable so that they can range beyond the closed space of the classroom. The techniques suggested in this handbook will enable your students, within days, to handle the portapak with the adroitness of the two riders and to study the streets and streams of their community with the industry of a tapeworm.

Eyeballing the Lens



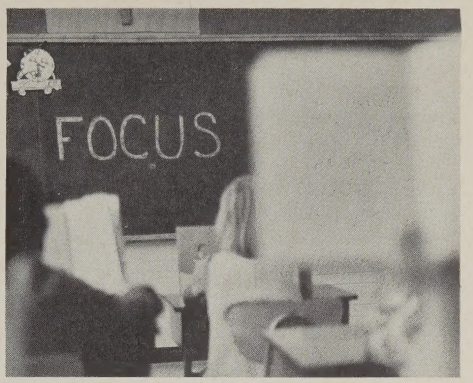
Besides showing the students how to charge and change the batteries, thread the tape and operate the recording controls — as difficult as handling an audio tape recorder — begin right away to demystify television by explaining the characteristics of the lens in terms of analogous experience.

As the human eye focuses on the desired object, so must the camera lens be focused on the selected object if the image is to be sharply defined. Like the human eye, the lens does not have an infinite depth-of-field. In terms the students can understand, all objects in line of vision at different distances from the lens cannot be put in focus all at once.

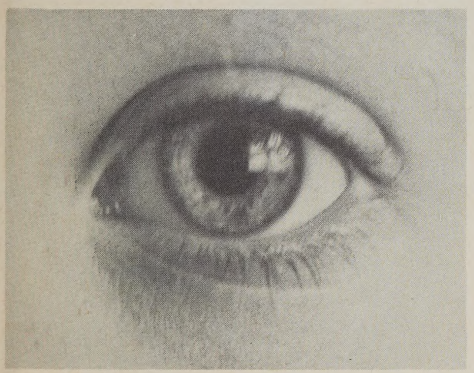


Have the students place a book (or one hand) as illustrated 12 inches in front of one eye. Ask them to stare at the print and, without taking their eyes off the book, describe how the objects beyond the book appear.

Conversely, have them look at objects in the distance and describe the print.

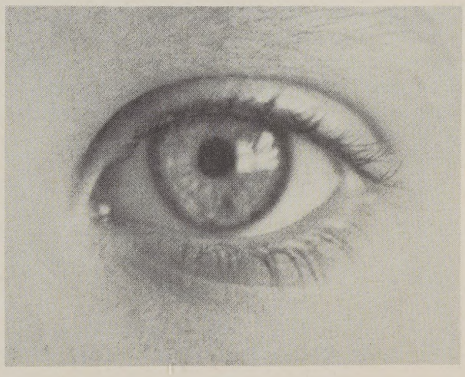


Now let the students take turns looking into the viewfinder of the portapak – a miniature TV picture! Rotate the focusing ring until the image they are looking at resembles the reception on a well-tuned television set. Disregard the numerical settings on the focusing ring; one can see if the picture is fuzzy or clear.



Another critical component of the lens is the aperture which is a mechanically adjustable diaphragm controlling the incoming light and regulating the depth-of-field. Goobledygook to kids. Call it an iris; forget its control of the depth-of-field, and compare its function to the human iris.

Pair up students, face-to-face; have one member of each pair cover his eyes with his hands. The other member must be prepared to describe what happens to his mate's eyes when he suddenly removes his hands. "Why do the pupils get smaller?" "What would be the size of the pupils in a dark room?" "What would it be like to see if the eye doctor put drops in your eyes which kept your irises wide open while you walked out in the bright light?"



Similarly, the cameraman must open the iris in dim light and close it down in bright locations. The scale of numbers (f/stops) on this adjustable ring should be noted because the indiscriminate user can damage the videcon if he leaves the iris open in very bright light. Urge the students to preset the iris to the light conditions; after this, the correct setting can be determined by the quality of the image in the viewer which in extremes appears milky or harsh. Some form of mnemonic might help:

Close down to sixteen
for very bright scene,
Set to number two
to let the light through.

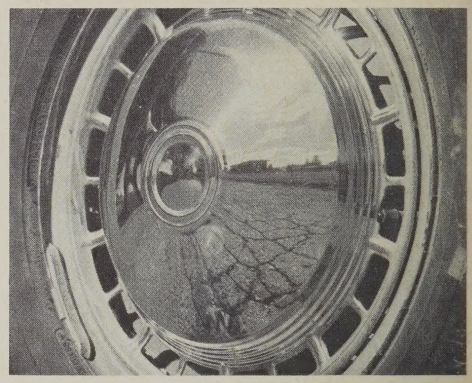
Don't Let the Sun Shine In

8

Sun streaks, sun flashes, lens flares. Since the late sixties there is hardly an aspiring or established film maker who hasn't "Let the Sun Shine In". And the commercial song cult chants of nothing but the coming of the sun and the going of the rain.

Either under the unconscious influence of current fads or out of sheer curiosity, the youngsters will want to shoot into the sun. Their results will be impressive – permanently so. Whether the portapak is turned off or on, the videcon tube will be burned when the camera is pointed at the sun. This burn, visible as a dark spot, a streak or toothpaste squiggle in the camera viewer, will occur in all subsequent shots, even when played back on the recorder. The chemical compound of the videcon is photo-sensitive and, once subjected to an intense light source, cannot be restored.

To preclude their having to collect 200 milk-jugs for the replacement cost of a videcon tube, stress that they should never shoot into the sun, never tape reflections of the sun, never point the camera directly at artificial lights at close range. Should your initiates inadvertently burn the videcon, console the Board: the most intensively trained technocrat, on a moon mission, floated down from the LEM, took a bead on the sun with the video-camera, and blew a billion dollar show!



Messing Around

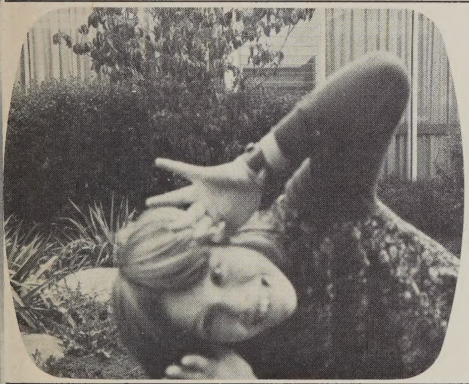
For their first independent session, assign the portapak to a mixed group of ten students and send them out into the school yard to shoot whatever they wish.* (Even the Grade 6's won't have to be supervised! The portapak, you'll find, mollifies the pathological dislike boys and girls have for each other at this level.) The intent of the exercise is to familiarize them with the mechanics of handling the portapak and to dispel the novelty of seeing themselves on television. There are a few explicit terms to their first contract:

each member is to shoot whatever he or she wishes
the crew must return in half an hour
one person holds the camera and one carries the recorder.

The weight of the recorder is a factor with which you must contend. Obviously, the fifty-pounder should be discouraged from trading off his ego for muscle strains.

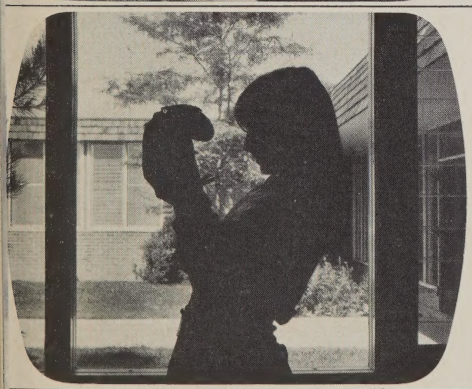
A half hour period is sufficient time to play back their tape and involve the whole class in the process of evaluation. The shots which the ebullient crew will bounce in with are, for the most part, predictable. Play their tape through in its entirety and then rerun the tape in order to hinge discussion on salient shots which you can freeze with the "still control". Temper your urge to dwell on faults; the rest of the class will be the crew's most vocal critics.

If you have only one portapak to work with, refer to the Addendum (page 32) for a suggested activity for the rest of your students.



Mugging

Laugh with them for the moment. Later you can have them enact emotions by role playing.



Silhouette

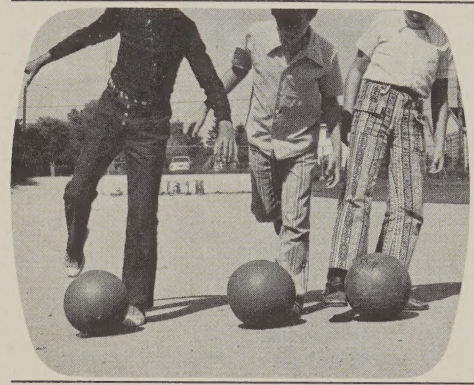
"How do we overcome the difficulty in this shot?" Discuss other situations they will likely encounter where the subject is backlit.
"When is silhouetting effective?"

Out-of-Focus

Have each student place his hand against the tip of his nose. Even the eye has limitations! "When would you intentionally want to shoot out-of-focus?"

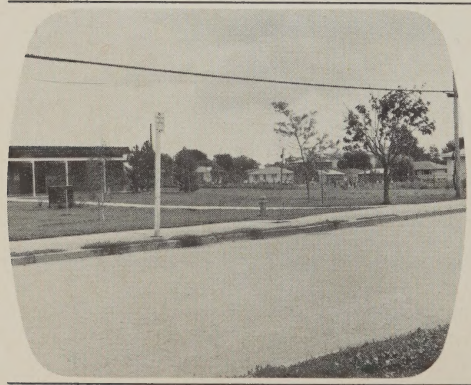
The Ubiquitous Sign

Admittedly irritating. The one whose shot was spoiled will chastise the culprit . . . yet what better springboard for the topic of non-verbal communication.



Cropping

Planning and practice eliminate cropping. The students will rightly complain that there wasn't enough time to rehearse the sequence.



The Blah Shot

No redeeming features. "What do we want our audience to see? to feel?" "Are long shots effective on television?" "What are the differences between film and television?"

Circles, Circles, Everywhere

The first explicit contract for a group (of ten) is to capture circles occurring in nature and the man-made world. Have them imagine that they have been hired to make a program which will teach the meaning of shapes to kindergarten children.

Again, time is a term of the contract. Allow them either half an hour within the school yard or an hour if the crew can be supervised while striking out beyond the school bounds. Since learning to work together is one of the prime objectives of all the contracts, let them try to organize themselves, delegate the jobs and block their time.

There are various purposes to this contract: it heightens their sense of awareness; it involves them in a stage of abstraction; it prepares them to document their observations, and it teaches them to handle composition.

Tighten the tether a little during this evaluation by judging their performance on the stipulation of the contract. The simplest criterion is whether the audience (the rest of the class) can readily identify the circles. The following photos exemplify the types of ten-second shots the students will likely take:

Fair

Flowers will be selected; kudos for that. The background – call it "clutter" – detracts from the intended circles.

Good

Here is the circle resplendent on its own. The subject is clearly dominant.

Fair

Not bad for texture (a term they'll not be familiar with anyway) but on the small screen the circle simply doesn't stand out.

Good

No doubt here. In fact, the circularity of the stone is accentuated by the irregular shapes which surround it.

Triangles and You Guessed... Quadrilaterals

The second crew will have benefitted from the critique of the "circle" crew. Because they'll bank on bettering the latter, confront them with natural and man-made triangles. The third crew's task is surmisable, though not significantly advantageous. For some reason, youngsters have difficulty identifying the rectilinear in nature. If they are stymied, have them smile at each other – this will set off a chain of discoveries.

During the evaluations of these and subsequent sessions, casually employ the cinematic language which the students will assimilate, and for the wrap-up be content with having them describe rather than define the following cinematic terms in the light of their experience:
Close-up
Medium Shot
Long Shot
Subject
Foreground
Background

Fair

With all the snow in the foreground, trees midground and sky in the background, just what is the intent of this shot? Allude to the limitations of the long shot on TV where the image is the size of your thumbnail at arm's length.

Good

Triangles abound in this close-up as a count will verify. How do we know this is a winter shot? Why include the pigeons when they could easily have been shooed off?

Fair

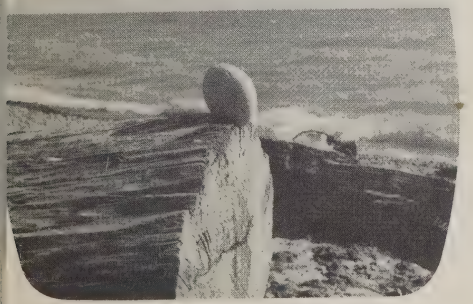
The shortcoming of the long shot in the context is obvious.

Good

For the purposes of the contract, a medium shot of the subject is better.

There will be occasions when youngsters will tape sequences which don't fulfill the exact stipulations of the contract. For example, the crew assigned to look for quadrilaterals may have been arrested by the sight of the migrating monarchs. It would be foolish to quibble about shape when the carriage is all.

'hat window isn't exactly a circle. . . . "
teer the audience away from niggling. The
ne who shoots through knotholes manifests
creativity that won't be contained by a
ɔctilinear world. Similar shots present the
pportunity to discuss with the senior stu-
ents the technique of "framing" and the
nportance of foreground.

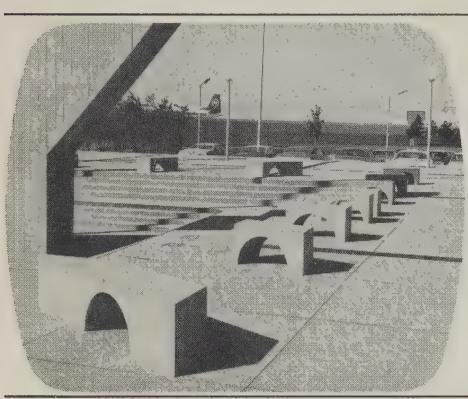


As contrived as this seascape appears, it indicates a most encouraging take-off. Art, after all, is the rearrangement of phenomena to express one's view of the world.

Making the Familiar Strange and the Strange Familiar

Ever wonder why there are so many good radio programs on television? The reason is that when television came along, those trained on radio designed a closed studio and treated cameras as ersatz microphones. In turn, the static structure of this studio dictated the program formats. The studio remains and so does its dull programming: static phone-in shows and two dimensional interviews.

If you have students young enough not to have been strongly influenced by this style of programming, there's hope that they may use television innovatively. Their initial, apparent tendency to shoot from eye-level, fixed to one spot, occurs not because they look at the world that way, but because that is the way they have seen adults use cameras. Thus, one of the best ways of guaranteeing a refreshing use of television is to destroy the tripod.



Eye-level

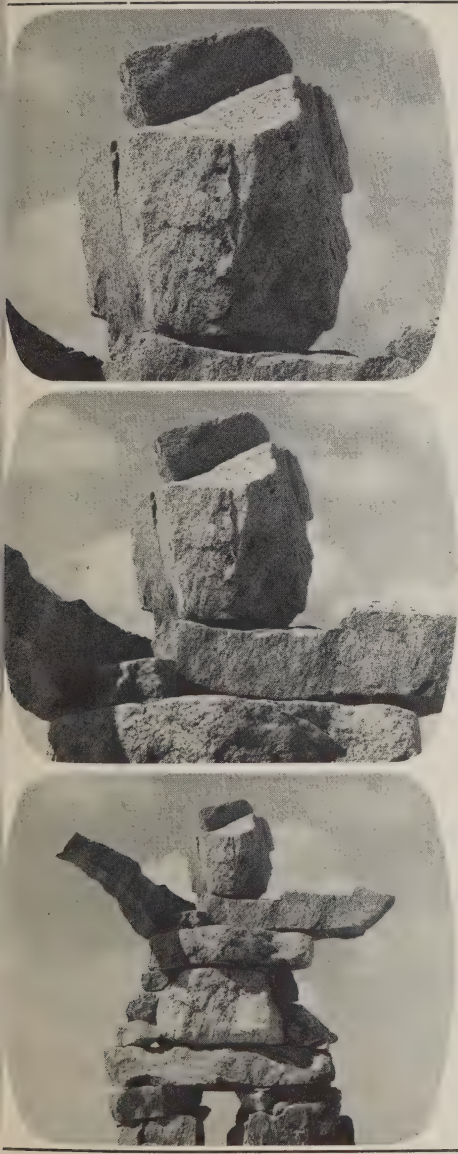
Belly-shot

Those of us nurtured on radio should keep in mind that sound strikes the senses from all directions, whereas vision is narrowed to a limited angle at any one time. So if we of the radio generation can teach others to see with the acuity of the ear, the camera will become more inquisitive.

When children walk in the woods they carry a stick to strike, poke and prod at plants, earth and water. Likewise, they should be encouraged to stroke their subjects with the lens. At first, the movements may be random and erratic. Control will follow after they see the results on the monitor. If you remind them that the portapak is an extension of themselves, ideas, objects and people can and will be presented in the most whimsical and candid manner.

he students will have been using the zoom ens before now. Though there is a grocery st of applications for this lens, in the final nalysis it is a special effects component hich provides the cameraman with elastic each. If it is used too frequently without eason in a sequence, the effect is dizzying, nd this constant picture pumping is called tromboning".

Utilize the theme of this contract to train the students to think constantly about the ways they want the audience to see and react to subjects. If the familiar/strange concept is too obscure, let it ride. With the next crew simply have them present objects by zooming. Still, the point of the exercise is to arouse the curiosity of the audience, so the crew must be prepared to explain **why** they used the zoom the way they did.



The following zoom-out sequence illustrates how the common-place rock can take on an entirely different aspect in its relationship to the whole:

When assigned the reverse — making the strange familiar — kids will often sight on a "weird" close-up of a grill and zoom-out to include the "obvious" car.

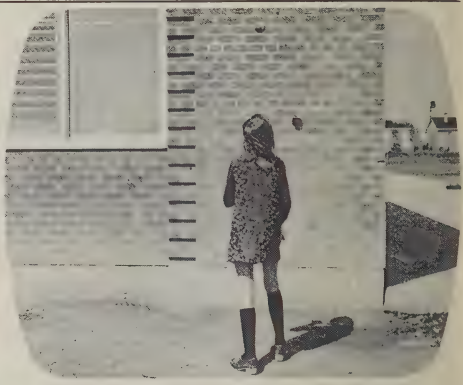
Rhythmic Motion

18 "Rhythm" signals the next phase in the students' development. Whereas the former contracts dealt essentially with the composition of the shot, the next two contracts include three additional elements: sound, movement and length of sequence. The objective is to make them conscious of the voice and spectacle of rhythm which can orchestrate their lives.

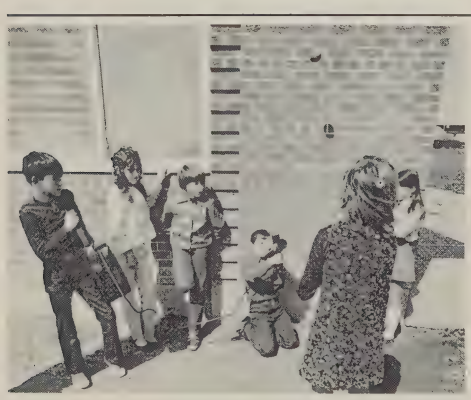
The contract: capture examples of natural and mechanical rhythms. The length of the sequences should be 30 to 60 seconds and should include the sounds of the objects in motion where possible.

Because the students will probably have varying amounts of musical training, you may find it necessary to discuss very briefly rhythmic motion versus random movement. Ask them to tell you how their bodies are in rhythm. They will cite the heart beat, running, skipping and singing. Once they know what you mean by rhythmic motion they will have no trouble with rhythms or cycles in nature. As soon as one provides an example of mechanical rhythms – say, windshield wipers – let the crew head out for an hour.

Shooting



Fair



Shooting

Good

The children should be singing a rhyme or clapping to the rhythm of the bouncing ball. These sounds are simultaneously recorded and synchronized with the video.

Rhythmic Patterns

ne contract of "Rhythmic Patterns" is a far ore demanding assignment than the evious one. Because the objects (patterns) e still, the cameraman must move on the bject by tilting, panning or travelling in der to create the visual impression of ythm or the illusion of regular motion. fter the crews have shot their sequences, ey return to class to select and dub sounds hich match the best of the visual patterns. his experiment with sound shows how they an animate sight.

ound dubbing is a simple procedure. Plug compatible microphone (plugs and jacks ary in size) into the video-recorder, place ne microphone close to the sound source a record player or audio cassette, for xample) and operate the dubbing controls. s the new sound track is recorded, the riginal sounds accompanying the location hots are automatically erased.

Many preparations can preoccupy two crews while the third is out taping rhythmic motion. Students could make musical instruments from found objects such as combs and bottles. Later, their video tape will force them to arrange the noises and make music. Another approach is to select the music first and then search for a pattern which relates to the sound. The resource centre might turn up classical, pop and sound effects records to which the students could listen for two periods.

To steer the first group on the right track, before setting out have them point out patterns of objects in the classroom and show you a variety of ways they could make one pattern come alive with the camera.

The length of their sequences should be 30 seconds, sufficient time to establish a mood or rhythm.

Tilt

flamenco recording
bullfighting from sound effects record
sounds of cold-striking iron against the grate

Pan

sand paper rubbing
reed or recorder improvisation
beats on dowels or bongos
clicking tongue

Hair of the Dog-
A Point of View

20

The contract: tape a day in the life of a dog from his point of view. Since most students are not yet ready to write a script, take the three crews out together to size up the neighbourhood as a dog might. Once in that frame of mind, they will plan their sequences orally; after that, make them go through several dry runs pretending to be a dog. The first group to articulate their plan should be permitted at least two hours to complete the project. Unless the students are supervised, count on the local misanthropist phoning the police.

As long as you assign the point of view of an animal, the contract will involve many of the essential elements of narrative writing. People don't fare as well. Disconcertingly, you'll find that when given the point of view of an old man, they'll present a montage of mini-skirts.

Stress that the camera is the dog or they will misunderstand the nature of the contract.

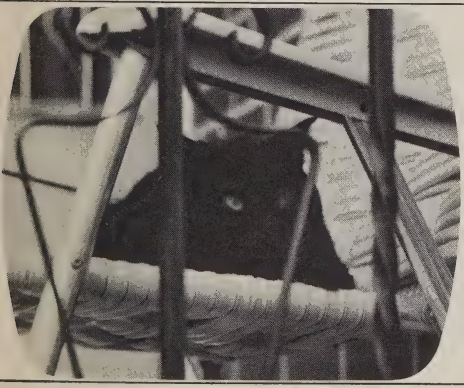
Establishing point-of-view

Movement

Effective high angle

Tracking

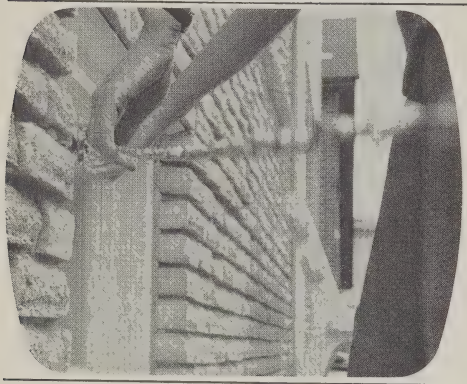
Inevitable



Suspense

Effective close-up

Another crisis



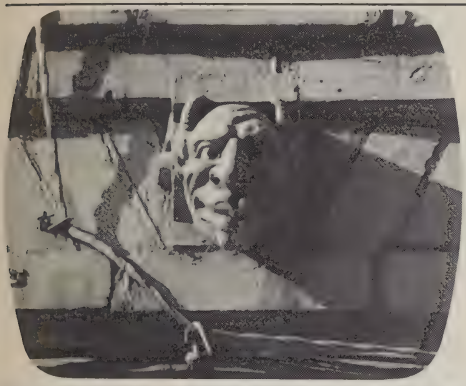
Catastrophe

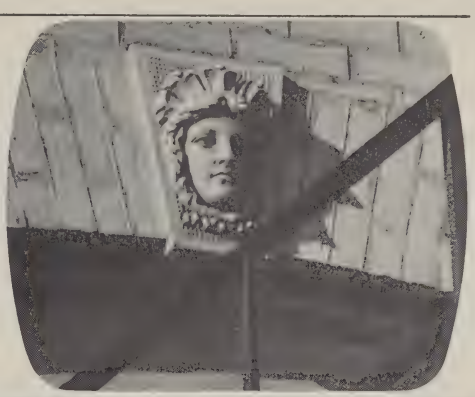
Here are some of the cinematic techniques and narrative conventions unwittingly employed by students given the point of view of an animal:
The students sublimate their attitudes and assume the persona of a dog.
They describe from a physical point of view different than their own.
They sustain a series of coherent and related sequences.
When editing in camera, they highlight action and learn the meaning of directional continuity.
They may structure in crisis, climax, etc.
They may elect to personify a talking dog – a sort of Snoopy stream-of-consciousness.

Twinning

The students' task in this contract is to personify with dialogue two like objects. The purpose is to introduce script writing. At first, let the students shoot any pair of objects and return to dub an impromptu dialogue. Unless they have taken a variety of shots, they will realize that dialogue can't be sustained regardless of its wit.

On the second venture with the same contract, have them search for twinned objects and return to plan their shots and timing around the dialogue. Introduce the form and convention for script writing at this time, and have them transcribe their ideas on mimeographed 8½" x 11" sheets with the columns drawn.





VIDEO	Time	AUDIO
M.S. Ugly face	10	Hey pretty face — how about going to a movie with me this afternoon?
M.S. Pretty face	15	No. you have promised to take me out for the last 500 years.

Ironically, students tend to regard their own script directions as unchangeable. The script, inform them, is only a working paper and they will have to be flexible enough to adjust to changing conditions on the site.

An alternative to the script is the storyboard. Cartoons and comic books can be used to illustrate not only how the storyboard is drawn, but many television techniques not treated in this handbook. Whether the storyboard is used separately or in conjunction with the script, both formats promote writing skills.

The Listeners

24 Another way of introducing script writing is to write out a poem on the audio section of a script, leaving the video blank for the students to script the shots.

The following excerpt from "The Listeners"* by Walter de la Mare demonstrates a painless method of having the students interpret a poem.

*Reprinted by permission of the Literary Trustees of Walter de la Mare and The Society of Authors as their representative.

"Is there anybody there?" said the Traveller,
Knocking on the moonlit door;

And his horse in the silence champed the grasses
Of the forest's ferny floor:

And a bird flew up out of the turret,
Above the Traveller's head:

And he smote upon the door again a second time;
"Is there anybody there?" he said.

But no one descended to the Traveller;
No head from the leaf-fringed sill

Leaned over and looked into his grey eyes,
Where he stood perplexed and still.

More AsSIGNments

26 The city and countryside abound with signs, the stuff for narrative and documentary.

The tired presentation of the Nativity with stable and shepherds, could be revitalized with a series of TO LET signs accompanied by an audio of knocking and slamming doors:

Try the universal language of symbols, numbers and trademarks:

. . . Or the moods and habits of people engaged in various activities and occupations. (Many people resent having their picture taken. To avoid unpleasantness, insist that the students ask their stubjects' permission.)

Look again at these photos and you may come to the conclusion that the portapak is a case of overkill. Besides, without electronic editors, editing in the portapak would result in a patchwork of distracting signal breakups. Though the rangefinder 35mm camera and slide projector combination would be an excellent means of recording these montages, these contracts with the portapak are preparing the students to manage the next contract.

A Good Place to Work

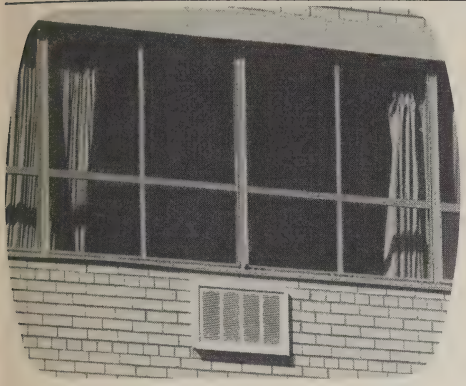
28 The following segments represent the culmination of a two-week community study by a Grade 5-6 class in Metro Toronto. The first week was spent researching the community by conducting interviews, making apartment counts and taking traffic surveys, etc.; the second in scripting, shooting and editing.

Title Shot

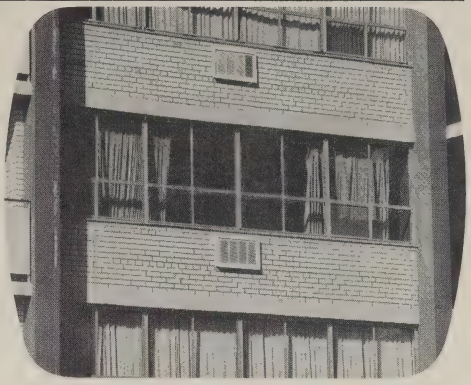
The entrance to this locality is used as a title shot for the documentary.
Rock music establishes mood and pace.

Pan

An overview of the community, shot atop a 40 storey apartment building. Voice over gives history, population and growth projections.



Zoom-in



An audio tape of an interview with a housewife is dubbed. Their questions are loaded: "The noise bothers you, doesn't it?"

Cut Away

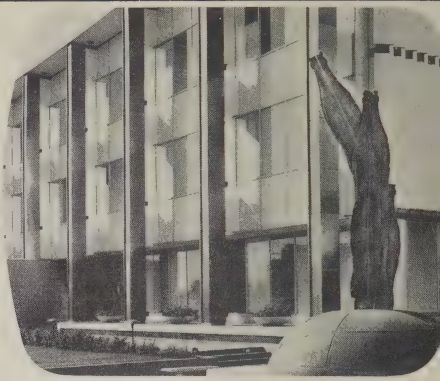
Moving bus serves a two-fold purpose: it relates to noise pollution and links up with dwellings. Sound of bus simultaneously taped with the video.

Tilt Up

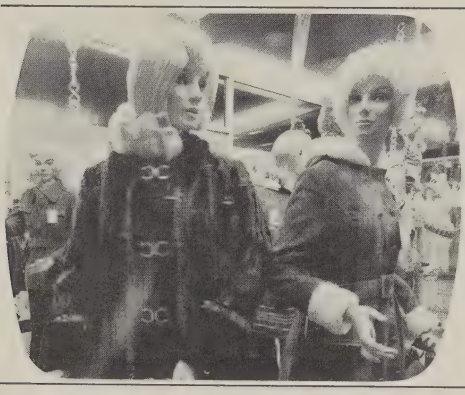
High angle is designed to overawe the viewer.

Voice over states the number of units, the number of floors and rentals.

Dolly Out



Dub of Coke commercial leads into second part of the study – a place to work.



And finally into the shopping plaza where poor lighting conditions created a problem.

Self-Destruct

Nowhere in this booklet is it suggested that the students carry out specific job functions associated with the production of television programs, i.e. director, producer, scriptwriter etc. Most of these terms represent kitch thought, such as "director" inherited from the days of stage. It is more important that the students organize themselves and devise their own roles rather than be locked into conventional jobs. One young girl who wrote in to thank OECA for the opportunity of working with video equipment told us she enjoyed being a "picture-pusher" – a lot more alliterative than "graphic puller".

There isn't a glossary of television terms included in this handbook because more than a dozen terms for shooting with the portapak is superfluous if not downright nonsense. Some media educators are under the mistaken impression that a knowledge of cinematic language is tantamount to an understanding of film and television. These terms are basically operational instructions for producing programs.

Finally, trouble-shooting and maintenance. At first you may encounter some irritating problems with the portapak. Batteries will run down faster in cold weather; picture signals will break-up near streetcar lines; sound could be spoiled by on-air signals from walkie-talkies. Read the manufacturers' instructions and have an audio-visual technician brief you. After you have tangled a tape and have to rethread it, you'll come to realize that, in the final analysis, the finger is a more important learning organ than the eye or ear.

This booklet should self-destruct now.

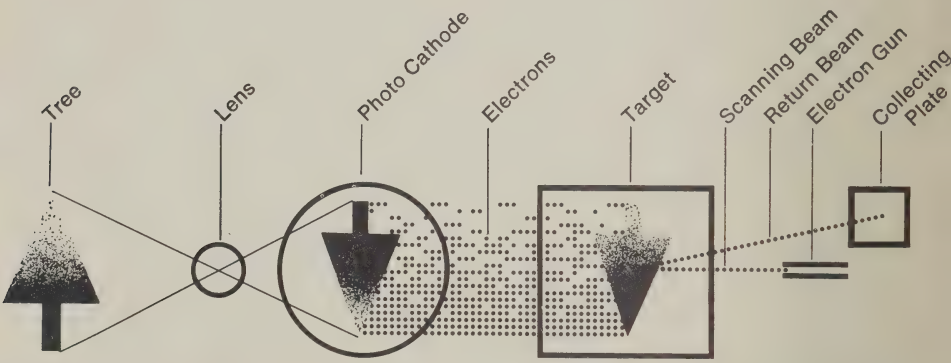
Addendum/Simulation Instead of Skull Cracking

32 One reason why people prefer print to television as a mode of expressing themselves is that they can comprehend the printing process. The mechanical replication of print is so elemental that a caveman could have been taught the fundamentals in minutes. The analogy could be drawn to his method of implanting a message into the skulls of his enemy with a war-axe.

Although the science of electronics is more sophisticated, the teacher can still explain television in ways the student can understand. Through harnessing their energy in simulation, the principles of the orthicon camera can be readily grasped within an hour.

Before proceeding to simulation, let's refer to the basic components of the orthicon camera detailed in two superb primers for elementary schoolers:

Corbett, Scott. **What Makes Television Work?** Little, Brown and Co.
David, Eugene. **Television and How It Works.** Prentice-Hall.

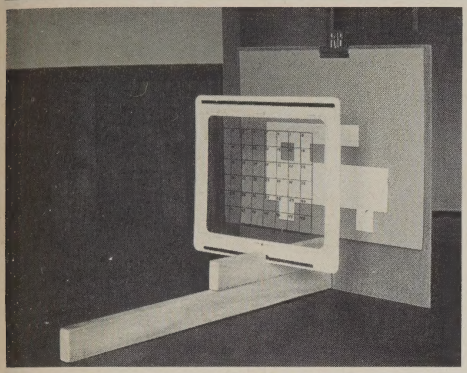


When light from the lens strikes the photocathode, a light sensitive screen, electrons are discharged. The more light, the more electrons; conversely, the darker areas release less electrons. These electrons dart straight to the target in the pattern of the photo cathode.

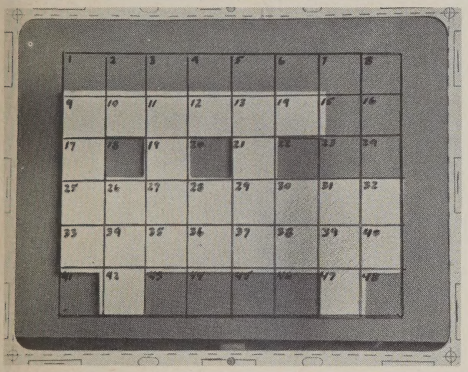
An electron gun, at the same time, sends out a steady beam of electrons at the target in a manner of scanning it from left to right, across and down, and left to right, as one reads print. There are 525 lines to a picture and the gun sweeps the picture 30 times a second. This beam measures the electron "message" on the target by reflecting back to the collecting plate the deficiency in the electrons it made up in those spots of the target depleted of electrons. This varying return beam, called the signal, is then sent on to be amplified.

For the simulation you'll have to construct some of the parts of the camera ahead of time. The few tools and materials required are readily available from the school shop and supplies:

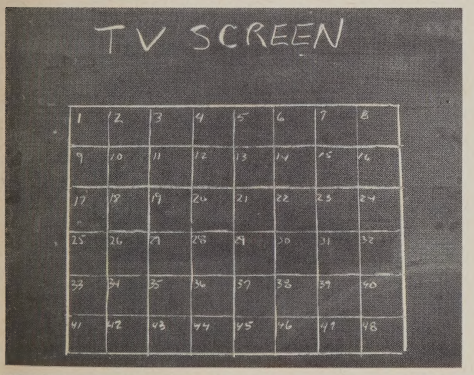
saw
scissors
fine sandpaper
3' pine strapping
masonite or heavy cardboard
contact cement
transparency
paper clamp
grease pencil
light and dark sheets of paper



Cut and sand two lengths of strapping, 21½" and 10".
Glue two lengths of strapping as illustrated.
Cut masonite to 16" x 16" and glue to end of fused strapping.
On transparency draw a 6" x 8" grid of one inch squares and number in sequence illustrated.
Cut out light paper in the stylized version of the school bus based on square modules of 1¼" and glue to dark sheet.

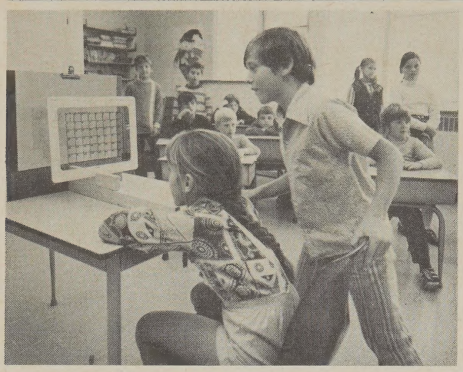


Placing chin on end of strapping, line up the transparency until the image of the bus aligns with the transparency. Mark this spot (approximately 6½" from masonite) and cut a transverse slot in the strapping to accommodate the transparency.



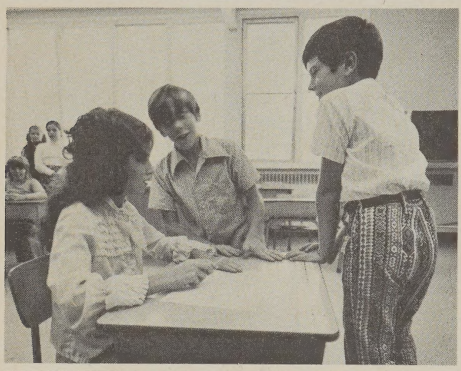
The remaining components of the orthicon camera are 5 students and that indispensible blackboard! Have a student draw a grid of 2" squares 16" x 12" on the board and number them to correspond to the transparency. The grid on the blackboard represents the television screen.

Clear space for running room for the *electrons* and set two desks back-to-back as shown in the photo.
The drawing of the bus (which the observers can't see) represents the image of the *photo cathode.*
The transparency and the girl facing the transparency grid become the *target.*
The boy in motion is the scanning *electron beam.*
The girl sitting at the desk with pencil and paper is both *gun* and *collecting plate.*
The boy standing in front of the seated girl becomes the *signal.*
The girl standing before the board is the *television set.*



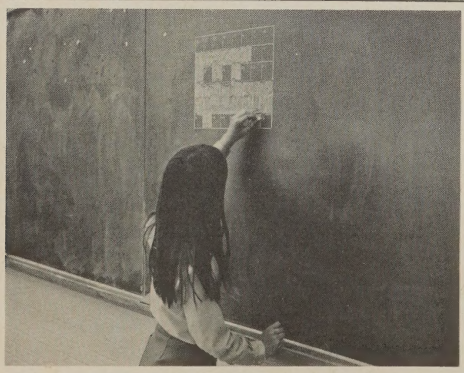
The *"orthicon camera"* is now ready to transmit the image at a breakneck pace.

The *electron beam* rushes to the *target* and asks, "Number one?"
The *target* replies, "Negative".



The returning *electron beam* spurts back to the *collecting plate* and repeats, "Number one, negative".
The *collecting plate* records the message.
The *collecting plate* in turn transmits "One negative" to the *signal.* It is necessary for the *collecting plate* to record the numbers because before long the *electron beam* and *signal* will be out of synchronization.

The *signal* sprints to the *television set* with the same message, and the girl will leave the first square blank.



Only the squares for positive response are chalked in. The operation continues 48 times.

Divide the class into groups of five and have them transmit other images which you have prepared. As long as the observers can't see the image on the photo-cathode, they will keep their eyes glued to the process and try to second guess what is being transmitted. After each group has had a chance to be a camera, distribute reproductions of the illustrations on page 32 and review the principles of the orthicon camera.